Pesticide Occurrence and Ground Water Quality Protection Through Development of Area-wide Pesticide Management Plans

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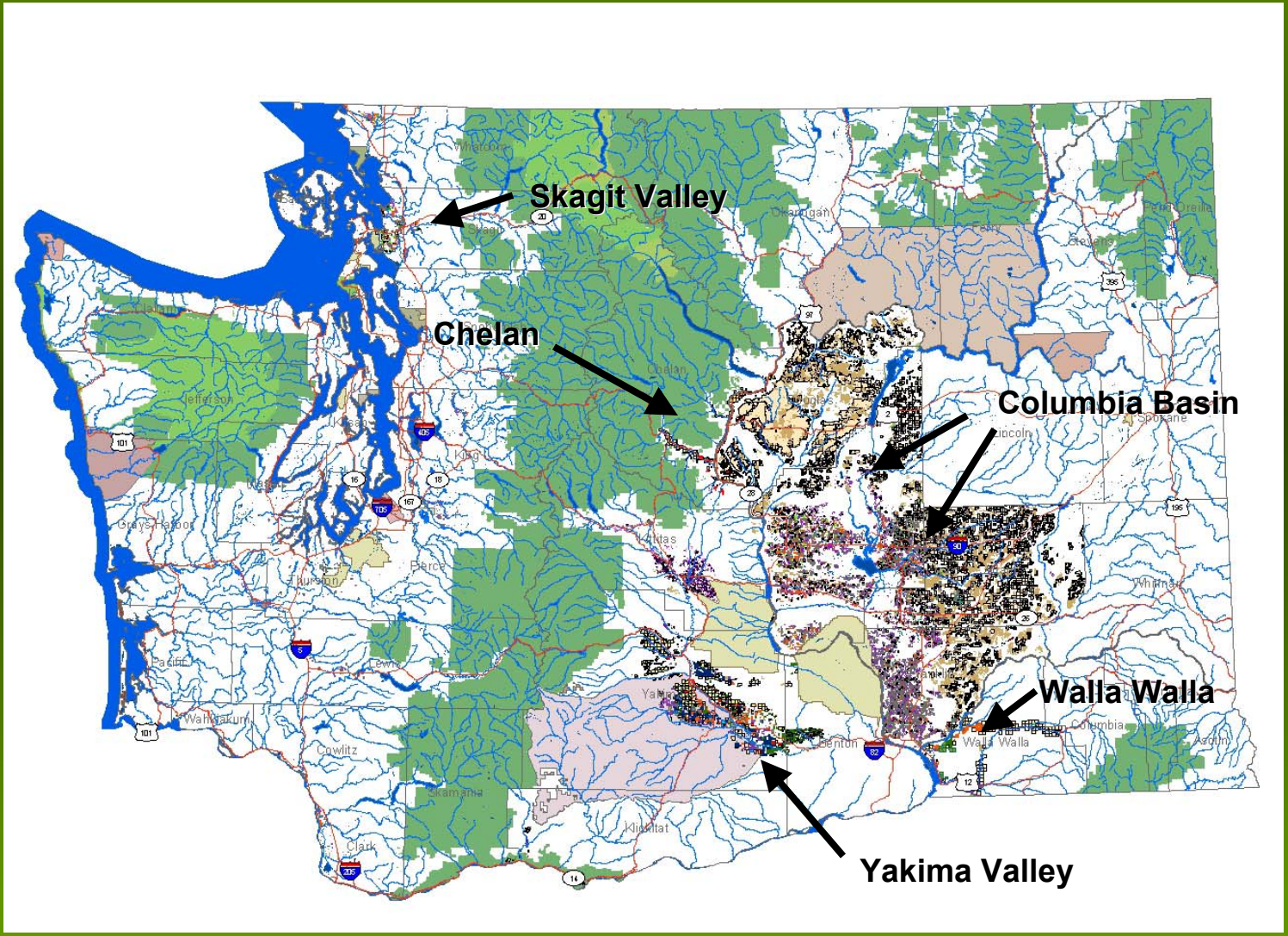
There are approximately 6500 pesticides approved for commercial use in the State of Washington

Upwards of 10,000 pesticides are approved for use in Washington State*

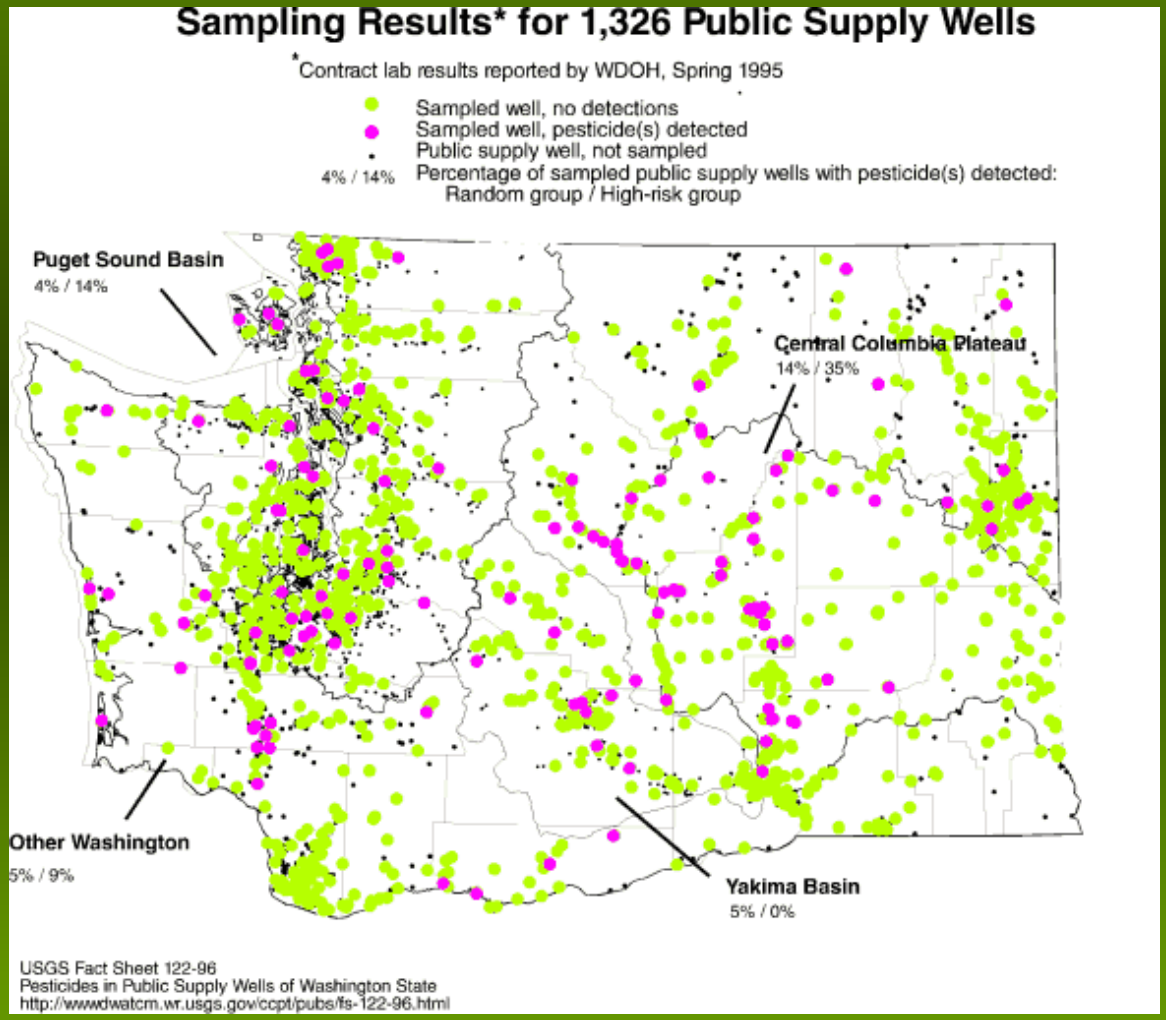
Less than 3% have been detected in ground water in Washington State

*Includes pesticides approved for home and garden use by non-commercial applicators

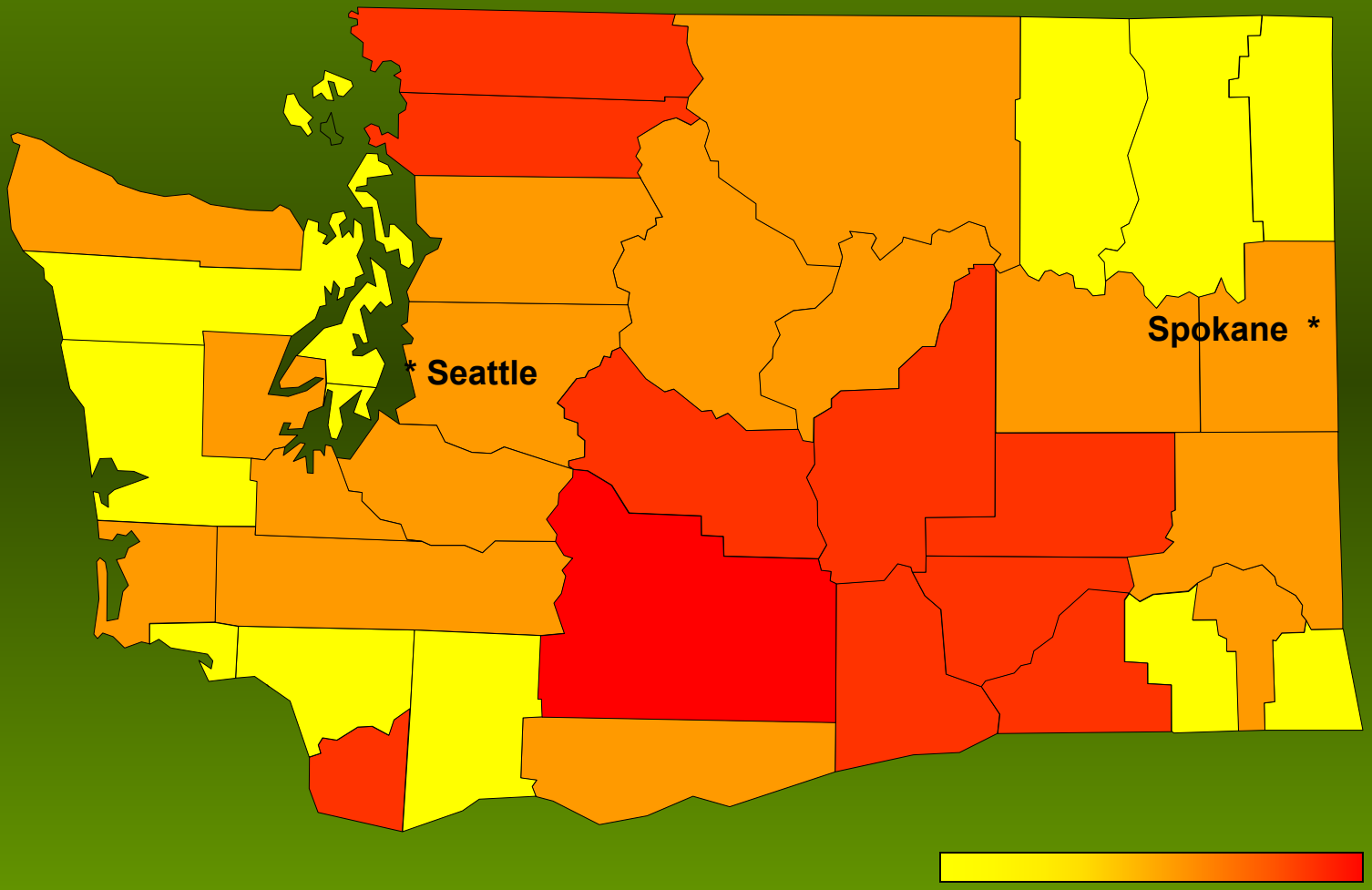
Major Irrigated Crop Areas of Washington



Documented Pesticide Occurrence in Washington
(Public Supply Wells)



Documented Pesticide Occurrence in Washington (All Recorded Sampling Sites)



Historical Pesticide Detections (WA)

	MCL	GWQS	WA Detection
Atrazine	3 ug/L	3 ug/L	.42 ug/L
Carbazole	--------	5 ug/L	7.02 ug/L
Dacthal	--------	PQL	.86 ug/L
Diacamba	--------	PQL	.025 ug/L
Diuron	--------	PQL	.12 ug/L
Mirex	--------	.05 ug/L	.07 ug/L
Prometon	--------	PQL	.013 ug/L
Simazine	4 ug/L	4 ug/L	.05 ug/L

Pesticide Monitoring
Flaws in Current Programs

Focus on chemicals currently banned or highly restricted

New products not generally monitored

No federal MCL's for a majority of pesticides currently in use

Pesticide Occurrence In Ground Water Highest for Herbicides

Reasons:

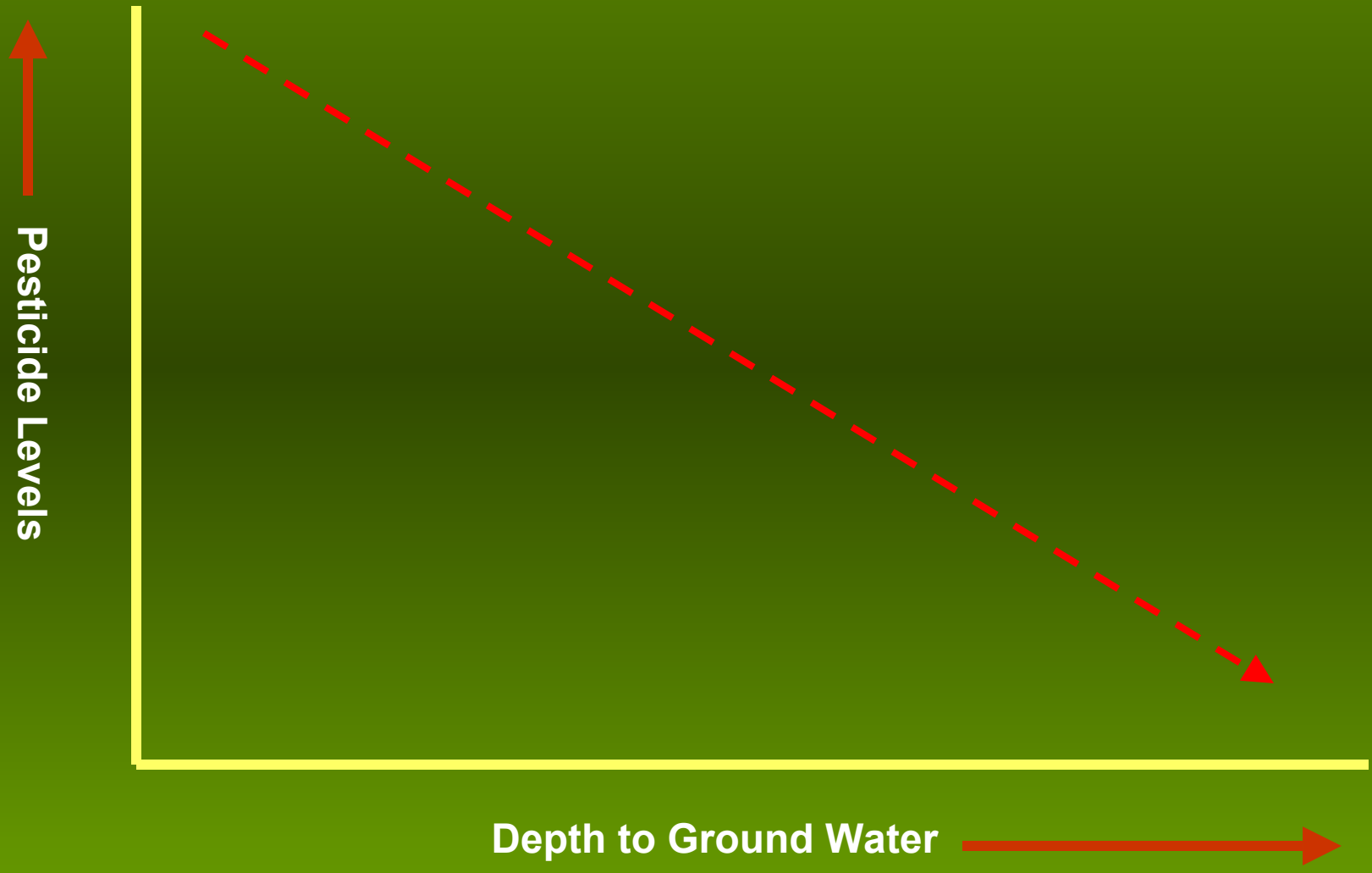
Application Quantities

Application Methods

Persistence of Pesticide

Timing with Irrigation

Pesticides Levels Tend To Be Greater in Shallow Ground Water

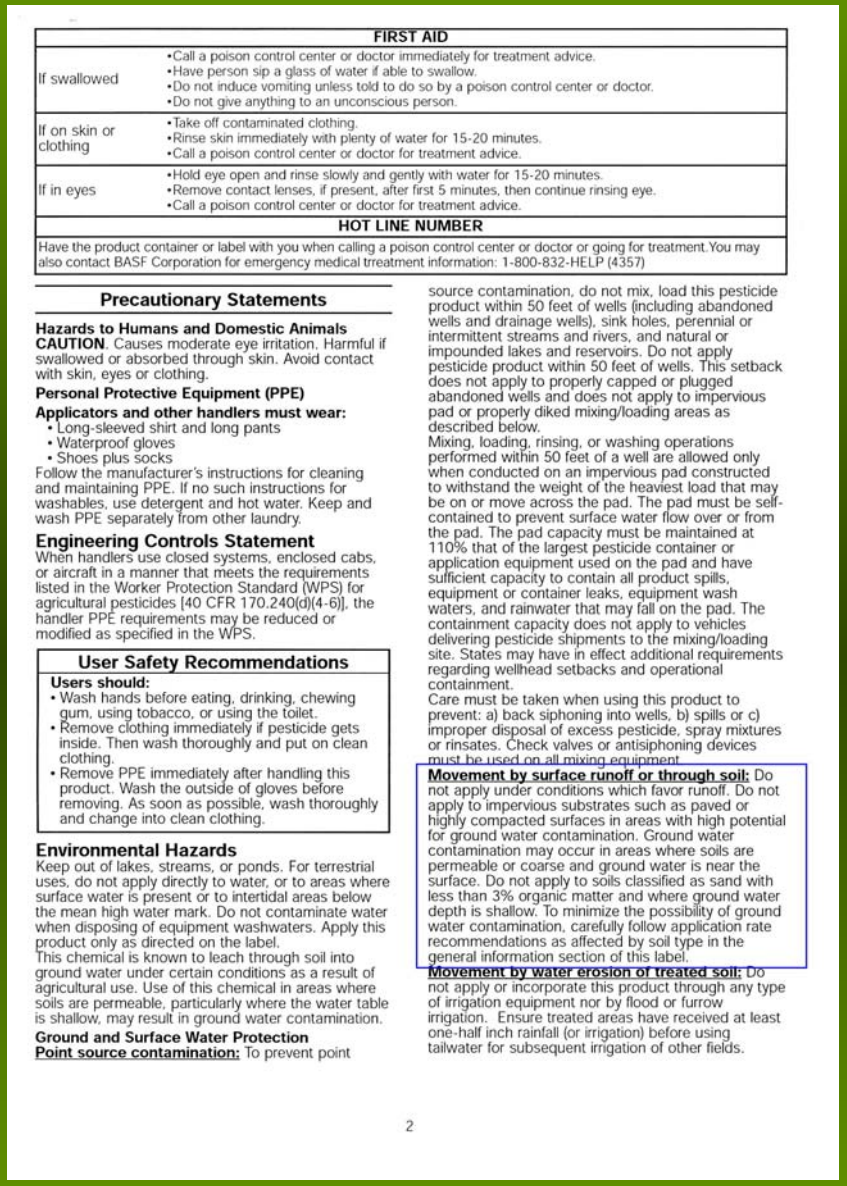


Pesticides of Concern in Washington State
(Based on Potential to Leach)

Extremely Low:	Endosulfan, Malathion, Paraquat, Permethrin
Very Low:	Carboxin, Dicofol, Parathion
Low:	Captan, Carbryl, *Diazinion*, Disulfoton, Triallate
Moderate:	Alachlor, Dinoseb, *Diuron*, Endothall, Lindane
High:	Aldicarb, *Atrazine*, Fenamiphos, Metolachlor, *Simazine*
Very High:	Carbofuran, Dalapon, *Dicamba, Hexazinone*, Picloram

Pesticides of Concern Have Enforceable Label Language That Prohibits Introduction Into Ground Water

Federal Insecticide Fungicide and Rodenticide Act & State Ground Water Quality Standards



FIRST AID	
If swallowed	•Call a poison control center or doctor immediately for treatment advice. •Have person sip a glass of water if able to swallow. •Do not induce vomiting unless told to do so by a poison control center or doctor. •Do not give anything to an unconscious person.
If on skin or clothing	•Take off contaminated clothing. •Rinse skin immediately with plenty of water for 15-20 minutes. •Call a poison control center or doctor for treatment advice.
If in eyes	•Hold eye open and rinse slowly and gently with water for 15-20 minutes. •Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. •Call a poison control center or doctor for treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357)	

Precautionary Statements

Hazards to Humans and Domestic Animals
CAUTION. Causes moderate eye irritation. Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing.

Personal Protective Equipment (PPE)
Applicators and other handlers must wear:
- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls Statement
When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations
Users should:
- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards
Keep out of lakes, streams, or ponds. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Apply this product only as directed on the label.
This chemical is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

Ground and Surface Water Protection
Point source contamination: To prevent point source contamination, do not mix, load this pesticide product within 50 feet of wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. Do not apply pesticide product within 50 feet of wells. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or properly diked mixing/loading areas as described below.
Mixing, loading, rinsing, or washing operations performed within 50 feet of a well are allowed only when conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be on or move across the pad. The pad must be self-contained to prevent surface water flow over or from the pad. The pad capacity must be maintained at 110% that of the largest pesticide container or application equipment used on the pad and have sufficient capacity to contain all product spills, equipment or container leaks, equipment wash waters, and rainwater that may fall on the pad. The containment capacity does not apply to vehicles delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.
Care must be taken when using this product to prevent: a) back siphoning into wells, b) spills or c) improper disposal of excess pesticide, spray mixtures or rinsates. Check valves or antisiphoning devices must be used on all mixing equipment.

Movement by surface runoff or through soil: Do not apply under conditions which favor runoff. Do not apply to impervious substrates such as paved or highly compacted surfaces in areas with high potential for ground water contamination. Ground water contamination may occur in areas where soils are permeable or coarse and ground water is near the surface. Do not apply to soils classified as sand with less than 3% organic matter and where ground water depth is shallow. To minimize the possibility of ground water contamination, carefully follow application rate recommendations as affected by soil type in the general information section of this label.

Movement by water erosion of treated soil: Do not apply or incorporate this product through any type of irrigation equipment nor by flood or furrow irrigation. Ensure treated areas have received at least one-half inch rainfall (or irrigation) before using tailwater for subsequent irrigation of other fields.

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State Pesticide Management Plan: What is it ?

History:

State Pesticide Management Plans were conceived as part of EPA's 1991 *Pesticide and Ground Water Strategy*

1996 adoption of the *Food Quality Protection Act (FQPA)*

June 26th 1996, EPA Office of Pesticide Programs (OPP) submitted: *Pesticides and Ground Water State Management Plan Regulation; Proposed Rule*

State Pesticide Management Plans:

Provide an established mechanism which the state can employ to allow the continued use of a pesticide, if that pesticide is determined to potentially affect ground water quality (EPA).

Continued use and application would be allowed under a stringent set of criteria and with sufficient environmental monitoring.

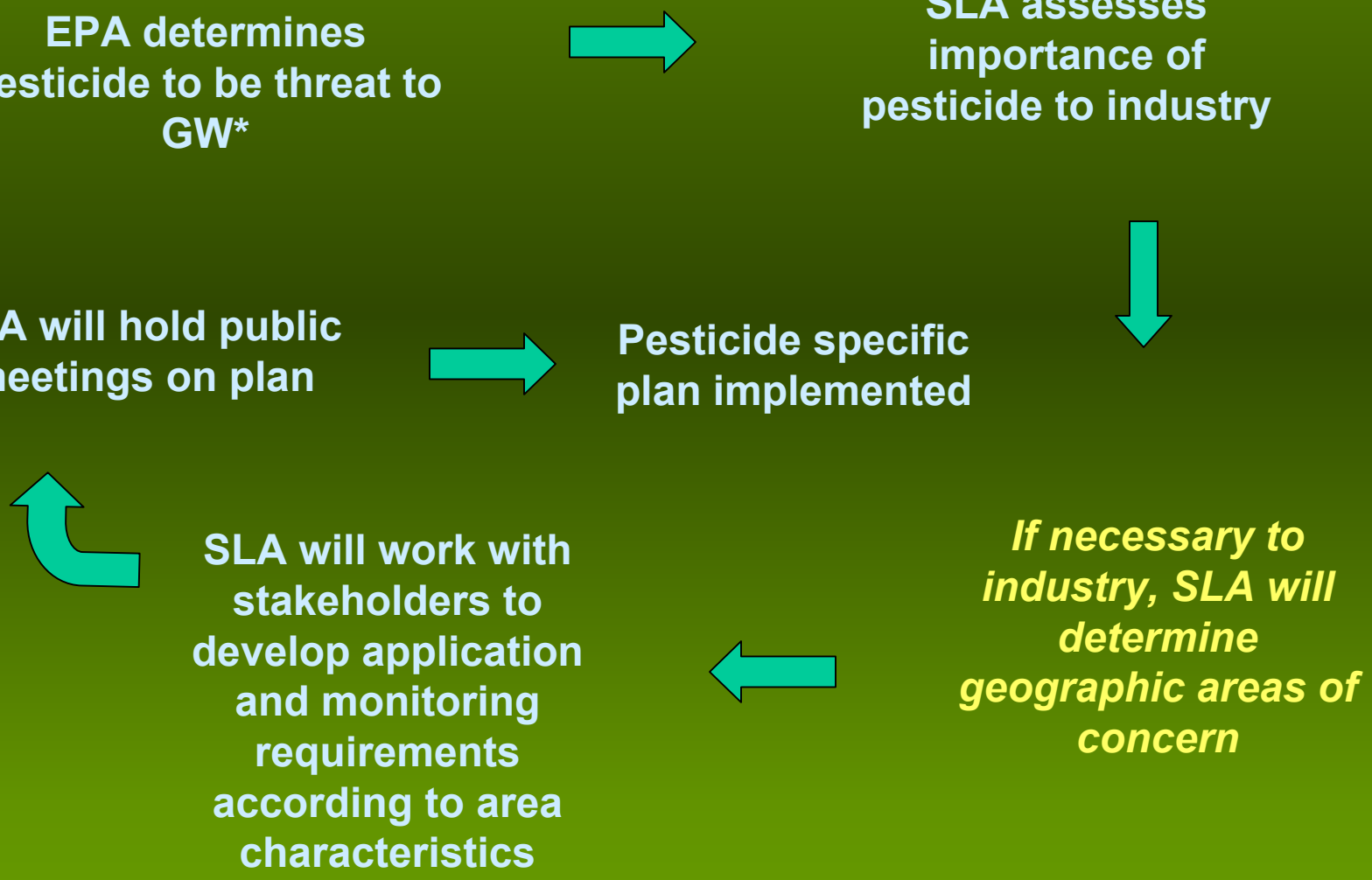
If sufficient protective measures cannot be employed or are ineffective, the pesticide can be removed from use.

There are two parts or phases to the Pesticide Management Plan Process:

State Generic Plan: **Provides basic information that is to be used in all subsequent pesticide specific plans**

State Specific Management Plans: **Provides pesticide specific use and application requirements, enforcement triggers, monitoring requirements**

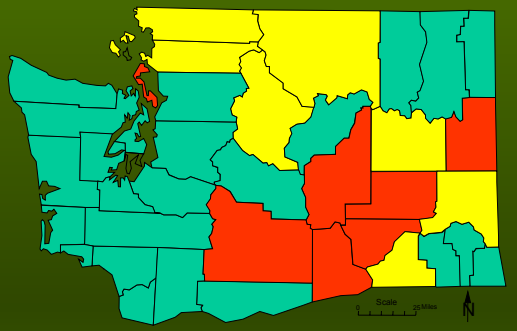
PMP Process


EPA determines pesticide to be threat to GW*
SLA assesses importance of pesticide to industry
Pesticide specific plan implemented
SLA will hold public meetings on plan
SLA will work with stakeholders to develop application and monitoring requirements according to area characteristics
If necessary to industry, SLA will determine geographic areas of concern

Geographic Assessment

Federal, State & Local Aquifer, Pesticide and Soil Data

Aquifer Vulnerability Analysis



Vulnerable Areas

SLA Evaluates GWQ Data in VA's

SLA Determines Need for PMP or Monitoring

Response to Ground Water Contamination

Establishment of Action Levels

- Federal MCL's, MCGL's, Ref Dose
- State Established Ground Water Standards

Graduated Matrix for Response*

- Based on % of MCL or other Numerical Limit

* High Reliance on Voluntary Measure(s)

Establishment of Action Levels

Ground Water Numeric Criteria/MCL

For pesticides that have a numeric criteria per Chapter 173-200 WAC, a target limit is established below the criteria to ensure protection of current and future beneficial use and to comply with the State's antidegration policy

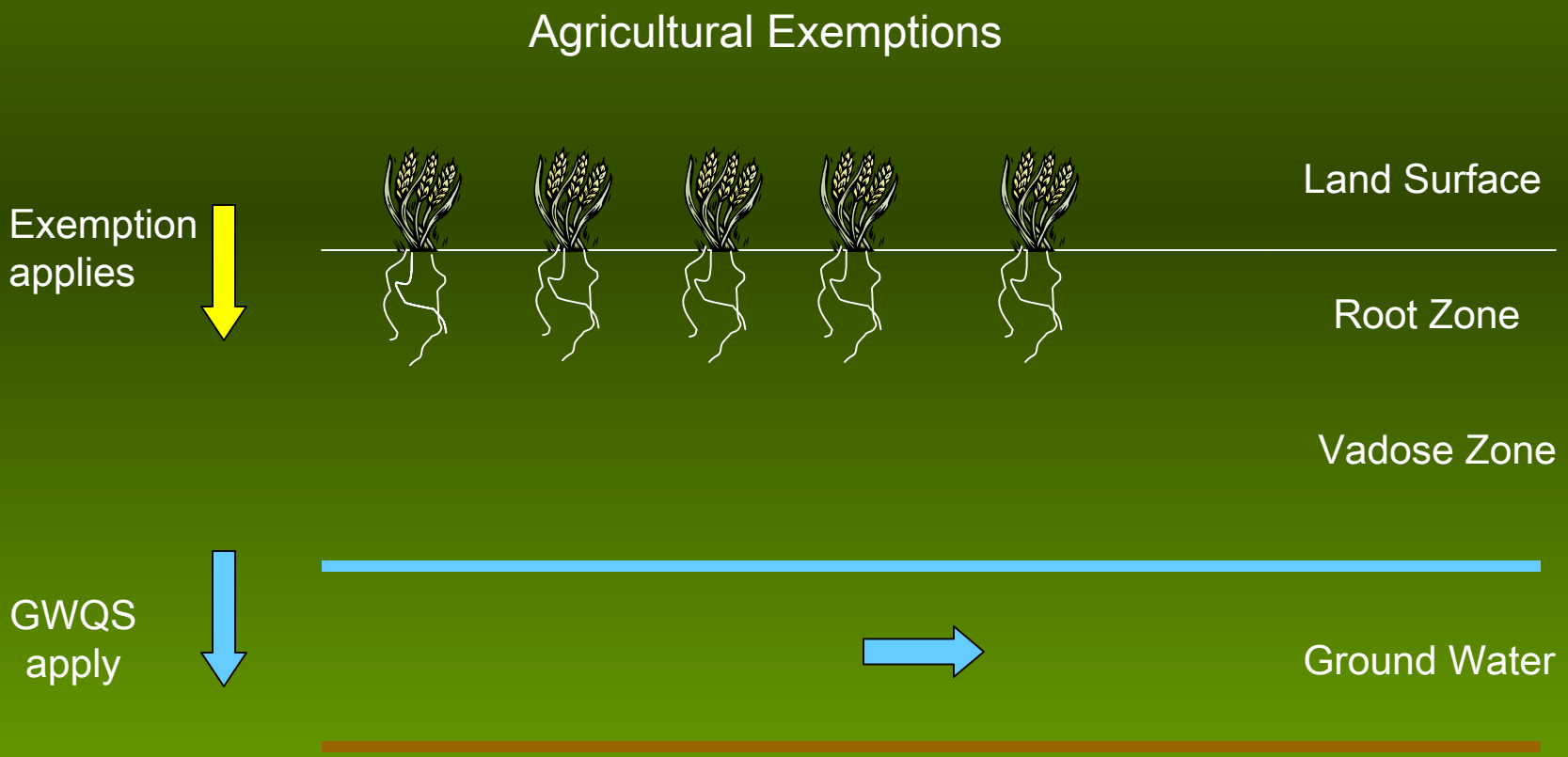
Target Limit

For pesticides that do not have a numeric criteria per Chapter 173-200 WAC, an enforcement limit above the PQL may be established based on human health or environmental effects.

Practical Quantification Limit

Concentration

GWQS can be avoided: Chapter 173-200(3)(a) WAC



Conclusion……

Questions or Technical Assistance

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